

US EPA ARCHIVE DOCUMENT

4WD-RCRA

SUBJ: Evaluation of Fernwood Industries status under the  
RCRIS Corrective Action Environmental Indicator Event  
Codes (CA725 and CA750)  
EPA I.D. Number: MSD 008 183 519

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**I. PURPOSE OF MEMO**

This memo is written to formalize an evaluation of the Fernwood Industries, Fernwood, Mississippi, facility status in relation to the following RCRIS corrective action codes:

- 1) Human Exposures Controlled Determination (CA725),
- 2) Groundwater Releases Controlled Determination (CA750).

The applicability of these event codes adheres to the definitions and guidance provided by the Office of Solid Waste

(OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors.

Concurrence by the RCRA Branch Chief is required prior to entering these event codes into RCRIS. Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing above.

## **II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)**

There are three (3) national status codes under CA725. These status codes are:

- 1) YE Yes, applicable as of this date.
- 2) NA Previous determination no longer applicable as of this data.
- 3) NC No control measures necessary.

Region 4 has added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures to current contamination risks are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NC) to explain the current status of exposure controls.

Note that the three national status codes for CA725 are based on the entire facility (i.e., the codes are not SWMU specific). Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725. Similarly, the regional status code, NO, is applicable if

plausible human exposures are not controlled in any areas of the facility.

This particular CA725 evaluation is the **first evaluation** performed by EPA for the Fernwood facility. Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i.e., soil, groundwater, surface water, air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code.

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

- N RFI Addendum Report, 01/15/93;
- N Annual SWMU Corrective Action Effectiveness Report,  
01/15/95; &
- N Semiannual Corrective Action Effectiveness Report,  
07/01/95.

### **III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES**

#### Background

Fernwood previously operated a wood preserving plant at its site in Fernwood, Mississippi. Wood products, primarily utility poles and foundation piling were pressure impregnated with creosote and pentachlorophenol (PCP). Fernwood used two surface impoundments (one of which was concrete lined) and a sand filter unit for the treatment and disposal of K001 sludge waste and process wastewater. A third RCRA-regulated impoundment collected

process wastewater only. Closure of these units was achieved between 1986 and 1989.

As stated, four units are known to have been closed: Impoundments Nos. 1 and 2, the condenser pond, and a sand filter unit. Bottom sediment sludge from Impoundment No. 1 (this is the unlined one) was placed in the sand filter unit for dewatering. Impoundment No. 1 is where the stabilized K001 sludge and contaminated soils were placed.

The State of Mississippi issued the base portion of a RCRA post-closure care and maintenance permit for the closed hazardous waste units. Permit provisions require the operation of a groundwater corrective action system, and semiannual reports.

#### Groundwater

The subsurface lithology is composed of sand and gravel with interlaminated and interbedded clay. The uppermost aquifer ranges in thickness from 8 to 20 feet. A local and potentially continuous clay layer occurs at 25 feet and may act as a confining bed. The site is in the floodplain of the Little Tangipahoa River. The general direction of groundwater flow is from the northeast to the southwest at an estimated linear velocity of between 1.5 and 1.9 feet/day.

Releases have contaminated groundwater with phenolic and base/neutrals constituents associated with the creosote and PCP wood treating process. However, production activities ceased in the late 1980's, the regulated units were closed according to approved closure plans, physical access was restricted, a deed restriction put into effect, and there is on-going groundwater recovery with onsite treatment and a NPDES discharge to Little Tangipahoa River.

The groundwater remediation system consists of these

components:

- N five (5) groundwater recovery wells,
- N six (6) dense nonaqueous phase liquid (DNAPL) recovery wells, and an
- N onsite treatment system with product/water separation, and other system components.

System start up occurred in October, 1990, and since then 202,242,200 million gallons of contaminated groundwater has been recovered, treated, and returned to the nearest surface water body, the Little Tangipahoa River. Through June, 1995, . 28,000 gallons of DNAPL have been recovered and shipped off-site for reclamation/disposal.

#### Surface Water

Historical surface water sampling of the Little Tangipahoa River does not indicate contamination. Because there is no evidence of surface water contamination, there are no plausible human exposures.

#### Soil

As presented in the Background section, four former RCRA-regulated units (i.e., process related) were closed. These former units are the likely source(s) of the current groundwater contamination. During the nine years of investigative soil sampling, numerous "hits" (i.e., soil samples which when analyzed detected contaminants) have occurred. However, the contaminants of concern do not hydrolyze, generally have low to very low water solubilities, are biodegradable, stable & non-reactive. In addition, and with the closure of the regulated units, the source(s) are believed to have been removed. Ultimately, there is a low possibility of the contamination migrating through the soil media.

On-site exposure to contaminated soil is possible if an intruder were to climb the security fence, disturbs the cap over the closed units, and were to expose the stabilized material inside. In the six years since the units were closed, there have been no reported incidence of trespassing. Off-site exposure to contaminated soil is not possible as there are no observed off-site releases to soil.

#### Air

Releases to air from soil, groundwater and/or surface water at Fernwood is not known or expected to be occurring above relevant action levels.

#### **IV. STATUS CODE RECOMMENDATION FOR CA725:**

Based upon facility investigations performed pursuant to the State of Mississippi's Post-Closure portion and the federal HSWA portion of the RCRA Permit, remedial measures have been implemented and appear successful in controlling plausible human exposures in all applicable media. Because human exposures to contamination are controlled at the Fernwood facility, it is recommended that **CA725 YE** be entered into RCRIS (see attached form).

#### **V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)**

There are three (3) status codes listed under CA750:

- 1) YE Yes, applicable as of this date.
- 2) NA Previous determination no longer applicable as of this date.
- 3) NR No releases to groundwater.

Region 4 has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable in the first CA750 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NR) to explain the current status of groundwater control.

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The point where the success or failure of controlling the migration of hazardous constituents is measured is termed the designated boundary (e.g., the facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels above action levels or cleanup standards, etc.). Therefore, every contaminated area at the facility must meet the definition before these event/status codes can be entered. Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility.

This evaluation for CA750 is the first formal evaluation performed for this facility. Please note that CA750 is based on the adequate control of **all** contaminated groundwater at the facility.

#### **VI. STATUS CODE RECOMMENDATION FOR CA750:**

As discussed above, the groundwater is contaminated by releases from former process units and other activities which occurred during the operating life of the facility. However, specific control measures are in place and are designed to prevent the further migration. Also, there are no indications that contaminated groundwater has migrated offsite. The



groundwater corrective action measures and the recovery of DNAPL appear to control the physical migration. Because of these efforts, it is recommended that **CA750 YE** be entered into RCRIS (attachment).

Attachments